

S. Zaghmout

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TECHNICAL SERVICES
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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/117,246

DATE: 10/27/2000

TIME: 13:45:01

Input Set : A:\50062.004001.SEQLIST.TXT

Output Set: N:\CRF3\10272000\I117246.raw

4 <110> APPLICANT: Ludevid, Doloros
5 Torrent, Margarita
6 Alvarez, Inaki
7 Perez, Pascual
9 <120> TITLE OF INVENTION: Amino acid-enriched plant protein
10 reserves, particularly lysine-enriched maize gamma-zein, and
11 plants expressing such proteins
14 <130> FILE REFERENCE: 50062/004001
16 <140> CURRENT APPLICATION NUMBER: 09/117,246
17 <141> CURRENT FILING DATE: 1998-12-03
19 <150> PRIOR APPLICATION NUMBER: PCT/FR97/00167
20 <151> PRIOR FILING DATE: 1997-01-28
22 <150> PRIOR APPLICATION NUMBER: FR96/01004
23 <151> PRIOR FILING DATE: 1996-01-29
25 <160> NUMBER OF SEQ ID NOS: 11
27 <170> SOFTWARE: FastSEQ for Windows Version 4.0
29 <210> SEQ ID NO: 1
30 <211> LENGTH: 44
31 <212> TYPE: DNA
32 <213> ORGANISM: Artificial Sequence
34 <220> FEATURE:
35 <223> OTHER INFORMATION: based on Maize
37 <400> SEQUENCE: 1
38 cgatgaattc aaaccaaagc caaagccgaa gccaaaagaa ttca 44
40 <210> SEQ ID NO: 2
41 <211> LENGTH: 46
42 <212> TYPE: DNA
43 <213> ORGANISM: Artificial Sequence
45 <220> FEATURE:
46 <223> OTHER INFORMATION: based on Maize
48 <400> SEQUENCE: 2
49 agcttgaatt cttttggctt cggtttggc ttggtttga attcat 46
51 <210> SEQ ID NO: 3
52 <211> LENGTH: 17
53 <212> TYPE: PRT
54 <213> ORGANISM: Maize
56 <400> SEQUENCE: 3
57 Ile Glu Phe Lys Pro Lys Pro Lys Pro Lys Glu Phe Leu Gln
58 1 5 10 15
59 Pro
63 <210> SEQ ID NO: 4
64 <211> LENGTH: 28
65 <212> TYPE: PRT
66 <213> ORGANISM: Maize
68 <400> SEQUENCE: 4
69 Ile Glu Phe Lys Pro Lys Pro Lys Pro Lys Glu Phe Lys Pro
70 1 5 10 15

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71 Lys Pro Lys Pro Lys Pro Lys Glu Phe Leu Gln Pro
72      20      25
75 <210> SEQ ID NO: 5
76 <211> LENGTH: 20
77 <212> TYPE: PRT
78 <213> ORGANISM: Maize
80 <400> SEQUENCE: 5
81 Asp Gly Ile Asp Glu Phe Lys Pro Lys Pro Lys Pro Lys Glu
82 1      5      10      15
83 Phe Lys Leu Asp
84      20
87 <210> SEQ ID NO: 6
88 <211> LENGTH: 672
89 <212> TYPE: DNA
90 <213> ORGANISM: Maize
92 <220> FEATURE:
93 <221> NAME/KEY: CDS
94 <222> LOCATION: (1)...(672)
96 <400> SEQUENCE: 6
97 atg agg gtg ttg ctc gtt gcc ctc gct ctc ctg gct ctc gct gcg agc 48
98 Met Arg Val Leu Leu Val Ala Leu Ala Leu Leu Ala Leu Ala Ala Ser
99 1      5      10      15
101 gcc acc tcc acg cat aca agc ggc ggc tgc ggc tgc cag cca ccg ccg 96
102 Ala Thr Ser Thr His Thr Ser Gly Gly Cys Gly Cys Gln Pro Pro Pro
103      20      25      30
105 ccg gtt cat cta ccg ccg ccg gtg cat ctg cca cct ccg gtt cac ctg 144
106 Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu
107      35      40      45
109 cca cct ccg gtg cat ctc cca ccg ccg gtc cac ctg ccg ccg ccg gtc 192
110 Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val
111      50      55      60
113 cac ctg cca ccg ccg gtc cat gtg ccg ccg ccg gtt cat ctg ccg ccg 240
114 His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro
115      65      70      75      80
117 cca cca tgc cac tac cct act caa ccg ccc cgg cct cag cct cat ccc 288
118 Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Pro Gln Pro His Pro
119      85      90      95
121 cag cca cac cca tgc ccg tgc caa cag ccg cat cca agc ccg tgc cag 336
122 Gln Pro His Pro Cys Pro Cys Gln Gln Pro His Pro Ser Pro Cys Gln
123      100      105      110
125 ctg cag gga acc tgc ggc gtt ggc agc acc ccg atc ctg ggc cag tgc 384
126 Leu Gln Gly Thr Cys Gly Val Gly Ser Thr Pro Ile Leu Gly Gln Cys
127      115      120      125
129 gtc gag ttt ctg agg cat cag tgc agc ccg acg gcg acg ccc tac tgc 432
130 Val Glu Phe Leu Arg His Gln Cys Ser Pro Thr Ala Thr Pro Tyr Cys
131      130      135      140
133 tcg cct cag tgc cag tcg ttg cgg cag cag tgt tgc cag cag ctc agg 480
134 Ser Pro Gln Cys Gln Ser Leu Arg Gln Gln Cys Cys Gln Gln Leu Arg
135 145      150      155      160

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137 cag gtg gag ccg cag cac cgg tac cag gcg atc ttc ggc ttg gtc ctc 528
138 Gln Val Glu Pro Gln His Arg Tyr Gln Ala Ile Phe Gly Leu Val Leu
139      165      170      175
141 cag tcc atc ctg cag cag ccg caa agc ggc cag gtc gcg ggg ctg 576
142 Gln Ser Ile Leu Gln Gln Gln Pro Gln Ser Gly Gln Val Ala Gly Leu
143      180      185      190
145 ttg gcg gcg cag ata gcg cag caa ctg acg gcg atg tgc ggc ctg cag 624
146 Leu Ala Ala Gln Ile Ala Gln Gln Leu Thr Ala Met Cys Gly Leu Gln
147      195      200      205
149 cag ccg act cca tgc ccc tac gct gct gcc ggc ggt gtc ccc cac tga 672
150 Gln Pro Thr Pro Cys Pro Tyr Ala Ala Ala Gly Gly Val Pro His *
151      210      215      220
155 <210> SEQ ID NO: 7
156 <211> LENGTH: 223
157 <212> TYPE: PRT
158 <213> ORGANISM: Maize
160 <400> SEQUENCE: 7
161 Met Arg Val Leu Leu Val Ala Leu Ala Leu Leu Ala Leu Ala Ala Ser
162 1 5 10 15
163 Ala Thr Ser Thr His Thr Ser Gly Gly Cys Gly Cys Gln Pro Pro Pro
164 20 25 30
165 Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu
166 35 40 45
167 Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val
168 50 55 60
169 His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro
170 65 70 75 80
171 Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Pro Gln Pro His Pro
172 85 90 95
173 Gln Pro His Pro Cys Pro Cys Gln Gln Pro His Pro Ser Pro Cys Gln
174 100 105 110
175 Leu Gln Gly Thr Cys Gly Val Gly Ser Thr Pro Ile Leu Gly Gln Cys
176 115 120 125
177 Val Glu Phe Leu Arg His Gln Cys Ser Pro Thr Ala Thr Pro Tyr Cys
178 130 135 140
179 Ser Pro Gln Cys Gln Ser Leu Arg Gln Gln Cys Cys Gln Gln Leu Arg
180 145 150 155 160
181 Gln Val Glu Pro Gln His Arg Tyr Gln Ala Ile Phe Gly Leu Val Leu
182 165 170 175
183 Gln Ser Ile Leu Gln Gln Gln Pro Gln Ser Gly Gln Val Ala Gly Leu
184 180 185 190
185 Leu Ala Ala Gln Ile Ala Gln Gln Leu Thr Ala Met Cys Gly Leu Gln
186 195 200 205
187 Gln Pro Thr Pro Cys Pro Tyr Ala Ala Ala Gly Gly Val Pro His
188 210 215 220
191 <210> SEQ ID NO: 8
192 <211> LENGTH: 693
193 <212> TYPE: DNA
194 <213> ORGANISM: maize

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196 <220> FEATURE:
197 <221> NAME/KEY: CDS
198 <222> LOCATION: (1)...(693)
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202 Met Arg Val Leu Leu Val Ala Leu Ala Leu Ala Leu Ala Ala Ser
203 1 5 10 15
205 gcc acc tcc acg cat aca agc ggc ggc tgc ggc tgc cag cca ccg ccg 96
206 Ala Thr Ser Thr His Thr Ser Gly Gly Cys Gly Cys Gln Pro Pro Pro
207 20 25 30
209 ccg gtt cat cta ccg ccg ccg gtg cat ctg cca cct ccg gtt cac ctg 144
210 Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu
211 35 40 45
213 cca cct ccg gtg cat ctc cca ccg ccg gtc cac ctg ccg ccg gtc 192
214 Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val
215 50 55 60
217 cac ctg cca ccg ccg gtc cat gtg ccg ccg ccg gtt cat ctg ccg ccg 240
218 His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro
219 65 70 75 80
221 cca cca tgc cac tac cct act caa ccg ccc cgg atc gaa ttc aaa cca 288
222 Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Ile Glu Phe Lys Pro
223 85 90 95
225 aag cca aag ccg aag cca aaa gaa ttc aaa cca aag cca aag ccg aag 336
226 Lys Pro Lys Pro Lys Pro Lys Glu Phe Lys Pro Lys Pro Lys Pro Lys
227 100 105 110
229 cca aaa gaa ttc ctg cag ccc ctg cag gga acc tgc ggc gtt ggc agc 384
230 Pro Lys Glu Phe Leu Gln Pro Leu Gln Gly Thr Cys Gly Val Gly Ser
231 115 120 125
233 acc ccg atc ctg ggc cag tgc gtc gag ttt ctg agg cat cag tgc agc 432
234 Thr Pro Ile Leu Gly Gln Cys Val Glu Phe Leu Arg His Gln Cys Ser
235 130 135 140
237 ccg acg gcg acg ccc tac tgc tgc cct cag tgc cag tgc ttg ccg cag 480
238 Pro Thr Ala Thr Pro Tyr Cys Ser Pro Gln Cys Gln Ser Leu Arg Gln
239 145 150 155 160
241 cag tgt tgc cag cag ctc agg cag gtg gag ccg cag cac ccg tac cag 528
242 Gln Cys Cys Gln Gln Leu Arg Gln Val Glu Pro Gln His Arg Tyr Gln
243 165 170 175
245 gcg atc ttc ggc ttg gtc ctc cag tcc atc ctg cag cag cag ccg caa 576
246 Ala Ile Phe Gly Leu Val Leu Gln Ser Ile Leu Gln Gln Gln Pro Gln
247 180 185 190
249 agc ggc cag gtc gcg ggc ctg ttg gcg gcg cag ata gcg cag caa ctg 624
250 Ser Gly Gln Val Ala Gly Leu Leu Ala Ala Gln Ile Ala Gln Gln Leu
251 195 200 205
253 acg gcg atg tgc ggc ctg cag cag ccg act cca tgc ccc tac gct gct 672
254 Thr Ala Met Cys Gly Leu Gln Gln Pro Thr Pro Cys Pro Tyr Ala Ala
255 210 215 220
257 gcc ggc ggt gtc ccc cac tga 693
258 Ala Gly Gly Val Pro His *
259 225 230

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DATE: 10/27/2000

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Input Set : A:\50062.004001.SEQLIST.TXT

Output Set: N:\CRF3\10272000\I117246.raw

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262 <210> SEQ ID NO: 9
263 <211> LENGTH: 230
264 <212> TYPE: PRT
265 <213> ORGANISM: maize
267 <400> SEQUENCE: 9
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269 1 5 10 15
270 Ala Thr Ser Thr His Thr Ser Gly Gly Cys Gly Cys Gln Pro Pro Pro
271 20 25 30
272 Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu
273 35 40 45
274 Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val
275 50 55 60
276 His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro
277 65 70 75 80
278 Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Ile Glu Phe Lys Pro
279 85 90 95
280 Lys Pro Lys Pro Lys Pro Lys Glu Phe Lys Pro Lys Pro Lys Pro Lys
281 100 105 110
282 Pro Lys Glu Phe Leu Gln Pro Leu Gln Gly Thr Cys Gly Val Gly Ser
283 115 120 125
284 Thr Pro Ile Leu Gly Gln Cys Val Glu Phe Leu Arg His Gln Cys Ser
285 130 135 140
286 Pro Thr Ala Thr Pro Tyr Cys Ser Pro Gln Cys Gln Ser Leu Arg Gln
287 145 150 155 160
288 Gln Cys Cys Gln Gln Leu Arg Gln Val Glu Pro Gln His Arg Tyr Gln
289 165 170 175
290 Ala Ile Phe Gly Leu Val Leu Gln Ser Ile Leu Gln Gln Gln Pro Gln
291 180 185 190
292 Ser Gly Gln Val Ala Gly Leu Leu Ala Ala Gln Ile Ala Gln Gln Leu
293 195 200 205
294 Thr Ala Met Cys Gly Leu Gln Gln Pro Thr Pro Cys Pro Tyr Ala Ala
295 210 215 220
296 Ala Gly Gly Val Pro His
297 225 230
300 <210> SEQ ID NO: 10
301 <211> LENGTH: 723
302 <212> TYPE: DNA
303 <213> ORGANISM: Maize
305 <220> FEATURE:
306 <221> NAME/KEY: CDS
307 <222> LOCATION: (1)...(723)
309 <400> SEQUENCE: 10
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311 Met Arg Val Leu Leu Val Ala Leu Ala Leu Leu Ala Leu Ala Ala Ser
312 1 5 10 15
314 gcc acc tcc acg cat aca agc ggc ggc tgc ggc tgc cag cca ccg ccg 96
315 Ala Thr Ser Thr His Thr Ser Gly Gly Cys Gly Cys Gln Pro Pro Pro
316 20 25 30

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VERIFICATION SUMMARY

DATE: 10/27/2000

PATENT APPLICATION: US/09/117,246

TIME: 13:45:02

Input Set : A:\50062.004001.SEQLIST.TXT

Output Set: N:\CRF3\10272000\I117246.raw